

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 August 2005 (25.08.2005)

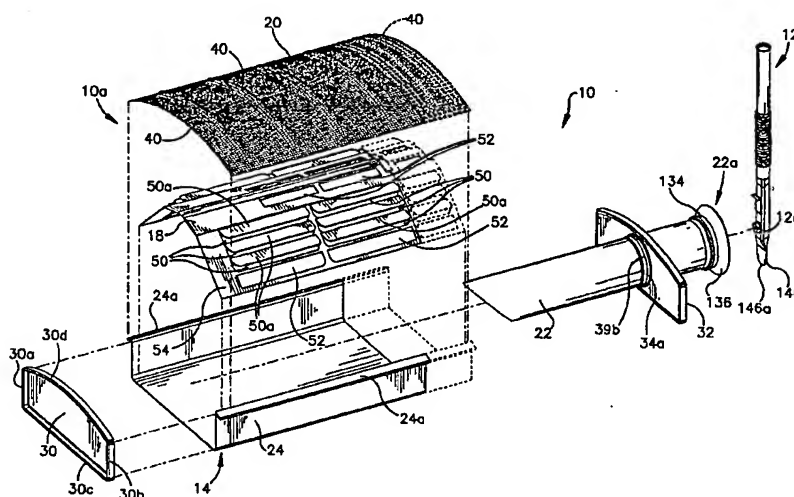
PCT

(10) International Publication Number
WO 2005/078344 A1

- (51) International Patent Classification⁷: F23D 14/62, 14/14, F22B 5/00
- (74) Agent: HLAVKA, John, R.; Watts Hoffmann Co., L.P.A., P.O. Box 99839, Cleveland, OH 44199-0839 (US).
- (21) International Application Number: PCT/US2005/003758
- (22) International Filing Date: 4 February 2005 (04.02.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/542,150 5 February 2004 (05.02.2004) US
- (71) Applicant (for all designated States except US): BECKETT GAS, INC. [US/US]; 38000 Taylor Parkway, North Ridgeville, OH 44039 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): COOK, Richard, D. [US/US]; 5899 Case Road, North Ridgeville, OH 44039 (US). O'DONNELL, Michael, J. [US/US]; 32785 Heartwood Avenue, Avon, OH 44011 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: BURNER



(57) Abstract: A gas burner including a burner body having a lower housing, an inlet conduit and a combustion surface element attached to the lower housing. A diffuser/reflector positioned within the body encourages even distribution and mixing of a combustible gas/air mixture. The diffuser/reflector is preferably of a sheet metal construction and includes a plurality of stamped openings with each of these openings having an overhanging guide plate. The combustion surface element includes a plurality of integrally formed rigidizing ribs and is made from a high temperature steel alloy wire cloth. The inlet conduit is secured directly or indirectly to an access door/bulkhead that is used to close off an access opening formed in a water heater wall through which the burner is installed. In one construction, an air scoop shrouds the inlet conduit and at least partially defines a flow path of primary air, substantially isolated from the combustion chamber.

WO 2005/078344 A1



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.